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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/720,132	12/19/2000	Jacques Meyer	859063.464	8866

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Seed Intellectual Property Law Group
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EXAMINER

WARE, CICELY Q

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/720,132	Applicant(s) MEYER, JACQUES	
	Examiner Cicely Ware	Art Unit 2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-12 and 15-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-12 and 15-19 is/are allowed.
- 6) ☒ Claim(s) 4-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.
2. Applicant's arguments, see REMARKS, filed 10/13/2005 with respect to the rejection(s) of claim(s) 4 and 6 under 35 USC 102(e) and 5 under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klank et al. (US Patent 6,226,337) in view of Klank et al. (US Patent 6,330,293).

(1) With regard to claim 4, Klank et al. ('337') discloses an OFDM demodulator comprising a fast Fourier transform circuit for analyzing a received signal in a window corresponding to one symbol, each symbol carrying several phase and amplitude modulated carriers, some of which, shifted in frequency in a

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predetermined way from one symbol to the next one, from pilots (col. 1, lines 32-38, col. 6, lines 56-63, col. 9, lines 52-67, col. 10, lines 1-6, 30-32, col. 11, lines 56-61, col. 14, lines 30-51); a bi-dimensional filter for interpolating, from anchors corresponding to the pilots such as received from several consecutive symbols (col. 4, lines 59-67, col. 5, lines 1-2), the distortion undergone by each carrier (col. 7, lines 55-59, col. 11, lines 62-67, col. 12, lines 6-12, 33-67); and means for correcting each distortion according to time domain window shifting corrections performed respectively for the symbol associated with the distortion and for the symbols associated with the anchors used to interpolate the distortion (col. 2, lines 3-10, col. 3, lines 21-34, 48-63, col. 6, lines 46-53, col. 11, lines 56-67, col. 12, lines 1-11).

However Klank et al. ('337') does not disclose means for correcting window shifting with respect to an optimal position.

However Klank et al. ('293') discloses means for correcting window shifting with respect to an optimal position (col. 1, lines 19-23, col. 2, lines 19-46, col. 7, lines 12-40, col. 8, lines 19-40).

Therefore it would have been obvious to one of ordinary skill in the art to modify Klank et al. ('337') in view of Klank et al. ('293') to incorporate means for correcting window shifting with respect to an optimal position in order to tune the received multicarrier digital signals, or check the system conformity of such digital signals (col. 2, lines 10-18).

(2) With regard to claim 6, claim 6 inherits all the limitations of claim 4. Klank et al. ('293') further discloses wherein each distortion is, in the frequency

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field after Fourier transform, a weighted sum of two anchors of the same position in a preceding symbol and in a following symbol, to which anchors have been added respective phases corresponding to the shiftings undergone by the analysis window for the preceding and following symbols, and to which anchors has been subtracted a phase corresponding to the shifting undergone by the analysis window for the symbol associated with the distortion (col. 7, lines 17-19, col. 9, lines 63-67, col. 10, lines 44-65, col. 12, lines 13-32, 40-64, col. 13, lines 8-13).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Klank et al. (US Patent 6,226,337) in view of Klank et al. (US Patent 6,330,293), as applied to claim 4 above, in view of Ikeda et al. (US Patent 5,506,836).

With regard to claim 5, claim 5 inherits all the limitations of claim 4. However Klank et al. ('337') in combination with Klank et al. ('293') do not disclose wherein the means for correcting the window shifting comprise a phase-locked loop synchronized on a correlation signal obtained by a correlation product between the received signal and this same signal delayed by one symbol

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each symbol being preceded by a guard interval corresponding to a copy of the end of the symbol.

However Ikeda et al. discloses an OFDM demodulation apparatus (Fig. 5, (890), Fig. 3 (853, 854, 856, 869, 868)) means for correcting the window shifting comprise a phase-locked loop synchronized on a correlation signal obtained by a correlation product between the received signal and this same signal delayed by one symbol each symbol being preceded by a guard interval corresponding to a copy of the end of the symbol (col. 7, lines 66-67, col. 8, lines 1-55, col. 13, lines 5-15, 53-57, 63-67, col. 14, lines 1-5).

Therefore it would have been obvious to one of ordinary skill in the art to modify the inventions of Klank et al. ('337) in combination with Klank et al. ('293) in view of Ikeda et al. to incorporate means for correcting the window shifting, wherein the means comprise a phase-locked loop synchronized on a correlation signal obtained by a correlation product between the received signal and this same signal delayed by one symbol each symbol being preceded by a guard interval corresponding to a copy of the end of the symbol in order to correctly reproduce the carrier wave signals and clock signal and to correctly generate the DFT(FFT) time window.

Allowable Subject Matter

4. Claims 7-12, 15-19 are allowed.
5. The following is a statement of reasons for the indication of allowable subject matter: The instant application discloses a COFDM demodulator. Prior art

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references show similar methods but fail to teach: **“the conversion circuit comprising first, second, and third analysis window shift value registers coupled to a first multiplexer; fourth, fifth, and sixth analysis window shift value registers coupled to a second multiplexer; the first and second multiplexers each having an output coupled to respective inputs of first and second adders; the first and second adders each having an output coupled to respective first and second multipliers; the first and second multipliers each having an output coupled to respective first and second polar-to-cartesian converters; and the first and second polar-to-cartesian converters each having an output coupled to respective second inputs of the first and second multipliers of the interpolation circuit; the interpolation circuit comprising first, second, second and third anchor input registers coupled to a first multiplexer; fourth, fifth, and sixth anchor input registers coupled to a second multiplexer; and first and second multipliers each having inputs coupled respectively to the first and second multiplexers and each further having an output coupled to a common adder”**, as in claim 7; **“receiving a position signal and outputting a conversion signal that is corrected for distortion, comprising calculating distortion according to claim 17”**.

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Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 571-272-3047. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Cicely Ware

cqw
February 6, 2006


CHIEH M. FAN
SUPERVISORY PATENT EXAMINER